

HIKVISION



Day Night Dome Camera

User Manual

www.hikvision.com

UD.6L0201D0117A01

Thank you for purchasing our product. If there are any questions, or requests, please do not hesitate to contact the dealer.

This manual applies to following cameras:

Models	Models
DS-2CC5102P(N)	DS-2CC5112P(N)
DS-2CC5172P(N)	DS-2CC5182P(N)
DS-2CC5192P(N)	DS-2CC51A2P(N)

This manual may contain several technical incorrect places or printing errors, and the content is subject to change without notice. The updates will be added to the new version of this manual. We will readily improve or update the products or procedures described in the manual.

DISCLAIMER STATEMENT

“Underwriters Laboratories Inc. (“UL”) has not tested the performance or reliability of the security or signaling aspects of this product. UL has only tested for fire, shock or casualty hazards as outlined in UL’s Standard(s) for Safety, UL60950-1. UL Certification does not cover the performance or reliability of the security or signaling aspects of this product. UL MAKES NO REPRESENTATIONS, WARRANTIES OR CERTIFICATIONS WHATSOEVER REGARDING THE PERFORMANCE OR RELIABILITY OF ANY SECURITY OR SIGNALING RELATED FUNCTIONS OF THIS PRODUCT.”

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Regulatory Information

FCC Information

FCC compliance: This equipment has been tested and found to comply with the limits for a digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Conditions

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation

EU Conformity Statement



This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized

European standards listed under the Low Voltage Directive 2006/95/EC, the EMC Directive 2004/108/EC.



2002/96/EC (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info.



2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: www.recyclethis.info.



Safety Instruction

These instructions are intended to ensure that user can use the product correctly to avoid danger or property loss.

The precaution measure is divided into “Warnings” and “Cautions”

Warnings: Serious injury or death may occur if any of the warnings are neglected.

Cautions: Injury or equipment damage may occur if any of the cautions are neglected.

	
Warnings Follow these safeguards to prevent serious injury or death.	Cautions Follow these precautions to prevent potential injury or material damage.



Warnings

- Please adopt the power adapter which can meet the safety extra low voltage (SELV) request. And source with DC 12V or AC 24V (depending on models) according to the IEC60950-1 and Limited Power Source standard.
- If the product does not work properly, please contact your dealer or the nearest service center. Never attempt to disassemble the camera yourself. (We shall not assume any

responsibility for problems caused by unauthorized repair or maintenance.)

- To reduce the risk of fire or electrical shock, do not expose this product to rain or moisture.
- This installation should be made by a qualified service person and should conform to all local codes.
- Please install blackouts equipment into the power supply circuit for convenient supply interruption.
- Please make sure that the ceiling can support more than 50(N) Newton gravities if the camera is fixed to the ceiling.



Cautions

- Make sure the power supply voltage is correct before using the camera.
- Do not drop the camera or subject it to physical shock.
- Do not touch sensor modules with fingers. If cleaning is necessary, use a clean cloth with a bit of ethanol and wipe it gently. If the camera will not be used for an extended period of time, put on the lens cap to protect the sensor from dirt.
- Do not aim the camera at the sun or extra bright places. A blooming or smear may occur otherwise (which is not a malfunction however), and affecting the endurance of sensor at the same time.

- The sensor may be burned out by a laser beam, so when any laser equipment is being used, make sure that the surface of the sensor will not be exposed to the laser beam.
- Do not place the camera in extremely hot or cold temperatures (the operating temperature should be between -10°C ~ 60°C, dusty or damp locations, and do not expose it to high electromagnetic radiation.
- To avoid heat accumulation, good ventilation is required for a proper operating environment.
- Do not let water and any liquid flow into the camera.
- While shipping, the camera should be packed in its original packing, or packing of the same texture.
- Improper use or replacement of the battery may result in hazard of explosion. Replace with the same or equivalent type only. Dispose of used batteries according to the instructions provided by the battery manufacturer.

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1 Introduction

1.1 Features

This camera adopts high performance sensor and advanced print circuit board design technology. It possesses of high resolution, low distortion, and low noise features, etc. It is extremely suitable for surveillance system and image process system.

- Supply high definition and clear image
- Day Night Auto Switch
- Low Illumination
- Support auto white balance with high color rendition
- Back Light Compensation
- Support auto electronic shutter control to adapt to different environments
- Support auto gain control, adaptive brightness
- High SNR ensures clear and pleased image
- Advanced Engineering Design, High Reliability
- Advanced 3-axis design allows this dome camera to be adjusted horizontally and vertically to meet different mounting requirements

1.2 Overview

The appearance of the cameras is as follows:

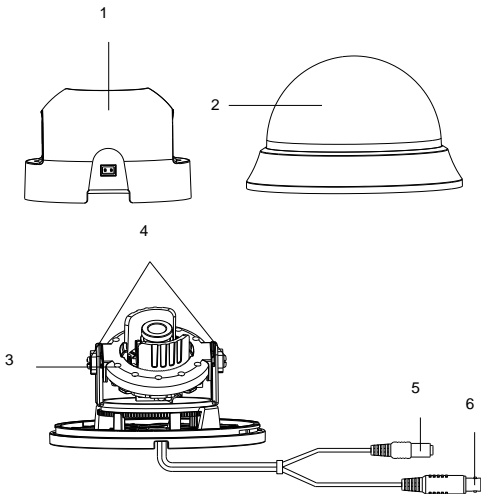


Figure 1-1 Overview

Table 1-1 Overview

Description	Description
1 Black Liner	2 Lower Dome

Description	Description
3 Camera	4 Tilt Lock Screws
5 Power Output	6 Video Output

2 Installation

Before you start:

Please make sure that the device in the package is in good condition and all the assembly parts are included.

- Make sure that all the related equipment is power-off during the installation.
- Check the specification of the products for the installation environment.
- Check whether the power supply is matched with your AC outlet to avoid damage.
- If the product does not function properly, please contact your dealer or the nearest service center. Do not disassemble the camera for repair or maintenance by yourself.
- Please make sure the wall is strong enough to withstand three times the weight of the camera.

Note: For the cement ceiling, you need to mount the camera with expansion screws. For the woodiness ceiling, you can mount the camera with self-tapping screws.

2.1 Ceiling Mounting

Steps:

1. Rotate the lower dome anticlockwise to remove it as shown in Figure 2-1.

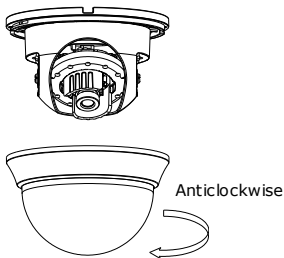


Figure 2-1 Remove the Lower Dome

2. Remove the black liner.

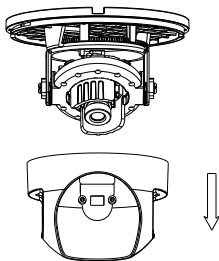


Figure 2-2 Remove the Black Liner

3. Attach the drill template (supplied) to the place where you want to fix the camera.
4. Drill two screws holes according to the circles on the drill template as shown in Figure 2-3.

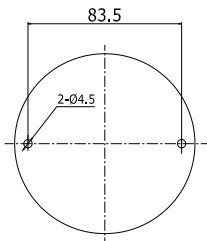


Figure 2-3 The Drill Template

5. Attach the camera to the ceiling by aligning screw holes of the camera with the screw holes on the drill template.
6. Secure the camera with screws as shown in Figure 2-4.
7. Route the cables for the camera. Please refer to the section **2.2 Wiring** for details.

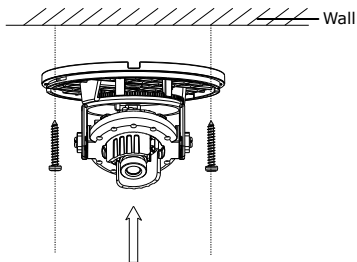


Figure 2-4 Install the Camera

8. Three-axis adjustment.
 - 1). View the camera image using the monitor.
 - 2). Rotate the panning table to adjust the panning position of the camera. The adjusting range is from 0 degree to 355 degrees.
 - 3). Loosen the tilt lock screws.
 - 4). Adjust the tilting position of the camera. The adjusting range is from 0 degree to 90 degrees.

- 5). Tighten the tilt lock screws.
- 6). Rotate the lens to adjust the azimuth angle of the image.

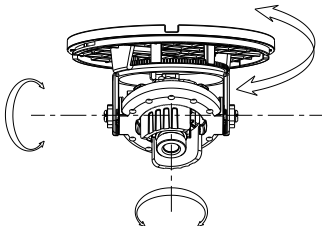


Figure 2-5 Three-axis Adjustment

9. Rotate the black liner clockwise back to the camera.

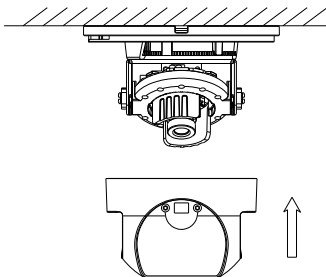


Figure 2-6 Install the Black Liner

10. Rotate the lower dome clockwise back to the camera.

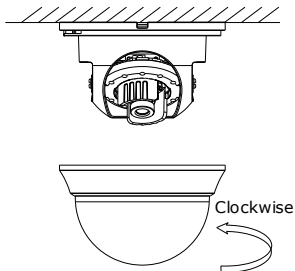


Figure 2-7 Install the Lower Dome

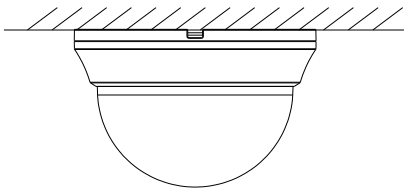


Figure 2-8 Finish the Installation

2.2 Wiring

- Please make sure that the power adapter matches with the camera.
- The standard power supply of the camera is 12V DC (Please refer to technical specifications for more details).
- Please plug the power adapter not too far away because the transmission distance of DC power is limited.

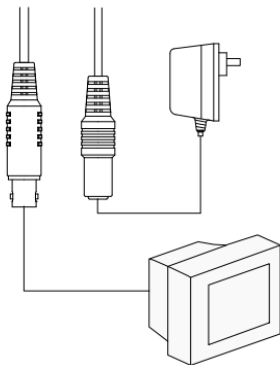


Figure 2-9 Connections

Appendix

1 Glossary

Note:

The glossary gives brief explanations to the basic operation principle or the basic function of the camera. However, it doesn't mean the listed functions are all supported by the cameras mentioned in this manual. Please take the function in the corresponding specification as the standard.

Definition:

Definition is the degree to distinguish the edge between two parts clearly.

Contrast:

Contrast is the color difference between the brightest and darkest parts.

Saturation:

Saturation is the degree of color purity. The color is purer, the image is brighter.

DAY/NIGHT Auto Switch:

The cameras deliver color images during the day. And as light diminishes at night, the cameras switch to night mode and deliver black and white images with high quality.

AGC:

AGC is a control circuit that automatically changes the gain of a receiver or other piece of equipment, so that the desired output signal remains essentially. When under low illumination, AGC will regulate the gain and amplification of the video signal.

S/N ratio:

It is the ratio of Signal voltage and noise voltage. The ratio is larger, the effect of noise is less, and the image is clearer.

White Balance:

White balance can remove the unrealistic color casts. White balance is the white rendition function of the camera to adjust the color temperature according to the environment automatically.

BLC:

If you focus on an object against strong backlight, the object will be too dark to be seen clearly. The BLC (Backlight Compensation) function can compensate light to the object in the front to make it clear, but this causes the over-exposure of the background where the light is strong.

SMART IR:

The SMART IR adopts the smart image processing technique to automatically adjust the brightness curve by detecting multi-zone brightness, and so as to prevent the over exposure of central point existed in short IR distance conditions.

Motion Detection:

In the user-defined motion detection surveillance area, the moving object can be detected and trigger alarm. The sensitive level can be customized according to the environment.

Privacy Mask:

This function allows you to block or mask certain area of a scene, thus prevent the personal privacy from recording or live viewing.

OSD (On Screen Display):

OSD is the texts superimposed on a screen. It can show the menu on the screen.

Synchronous System:

Synchronization of the camera usually contains power synchronization and internal synchronization. Internal synchronization is realized by the synchronous signal which is generated by the inside crystal oscillator.

ICR Auto Switch:

The filter will filter infrared light during the daytime and change to normal filter at night to ensure a high sensitivity and clear image.

WDR (Wide Dynamic Range):

The wide dynamic range (WDR) function helps the camera provide clear images even under back light circumstances. When there are both very bright and very dark areas simultaneously in the field of view, WDR balances the brightness level of the whole image and provide clear images with details.

EIS (Electronic Image Stabilization):

Electronic image stabilization function can reduce certain ranges of vibration which is caused by the external environment.

3D Digital Noise Reduction:

Comparing with the general 2D digital noise reduction, the 3D digital noise reduction function processes the noise initiated by

CCD besides processing the noise in the separated Y video signal and C video signal.

HLC (High Light Compensation):

The HLC is capable of detecting and reversing the bright spots in the picture (such as headlights) to black so as to achieve optimum picture quality.

Digital Zoom:

Digital zoom helps to crop the entire image, and then digitally enlarge the size of a portion of image that is needed to zoom in on.

2 Troubleshooting

Problem 1:

Why does the camera restart intermittently? And the problem is much more serious when infrared lights of IR camera are turned on at night.

Possible Reasons:

The main and common reason is power supply shortage. This problem may happen to the IR camera especially at night, because the infrared lights are turned on at night and increase the power consumption.

To Solve the Problem:

You need to ensure that the power supply matches with $\pm 10\%$ of the nominal voltage. And the power consumption of power adapter should meet the demand of the camera.

Problem 2:

The camera can never be focused by adjusting the focus-stick on the lens. And there is also no use adjusting the back focus.

Possible Reasons:

The camera needs the lens with CS lens mount. When you install a lens with C lens mount, the camera will never be focused.

To Solve the Problem:

You can change a lens with CS lens mount to the camera.

Or you can use a C/CS adapter ring between the camera and the lens with C lens mount.

Problem 3:

The camera is installed with an auto-iris lens. You adjust the focus to get a clear image in the daytime. But the image is defocused at night.

Possible Reasons:

In the daytime, the illumination is high, so the iris is adjusted to a small size automatically. The DOF (depth of field) is long. But at night, the iris is adjusted to a large size automatically, so the DOF is shortened. The focus you adjusted in the daytime now locates out of the DOF, so the image is defocused at night.

To Solve the Problem:

When you adjust the focus for a camera with an auto-iris lens, you need to set the lens type to AES (auto electronic shutter) mode. Under AES mode, the iris is adjusted to the largest size automatically. Then you can adjust the focus to get a clear image. At last, you need to set the lens type back to AI (auto iris) mode. Or you can adjust the focus in low illumination condition, such as at night.

Problem 4:

A camera with OSD menu and an auto-iris lens displays black video. But the OSD menu can be called and displayed.

Possible Reasons:

Auto-iris lens connector is loose contact.

Or the iris driven mode of the camera does not match with the mode of auto-iris lens.

To Solve the Problem:

Check the auto-iris lens connector to ensure good contact.

Set the iris driven mode of the camera the same as the mode of lens. The modes can be VD (video drive) or DD (direct drive). DD mode is commonly used.

3 Technical Maintenance

Lens Maintenance

The lens surface is plated an anti-reflection coating. The dust, oil and finger print, etc. will cause scratch, mildewed and performance degraded. Please refer to the following method to clean the lens.

- Handling dust

Use oil free soft brush or blowing dust ball to clean the dust.

- Handling oil

Steps:

1. Wipe off the water-drop or oil by soft cloth and dry the lens.
2. Use oil free cotton cloth or lens clean paper to wipe the lens from center to outside with alcohol or detergent.
3. Change the cloth to wipe the lens until the lens is clean.

Bubble Maintenance of Domes

The bubble is of transparent plastic. The dust, oil and finger print, etc. will cause scratch or image blur. Please refer to the following method to clean the bubble.

- Handling dust

Use oil free soft brush or blowing dust ball to clean the dust.

- Handling oil

Steps:

1. Wipe off the water-drop or oil by soft cloth and dry the bubble.
2. Use oil free cotton cloth or bubble clean paper to wipe the bubble from center to outside with alcohol or detergent.

3. Change the cloth to wipe the bubble until the bubble is clean.

Glass Maintenance of IR Camera

Steps:

1. Wipe off the dust, water-drop or oil by soft cloth and dry the glass.
2. Use oil free cotton cloth or glass clean paper to wipe the glass from center to outside with alcohol or detergent.
3. Change the cloth to wipe the glass until the glass is clean.

First Choice for Security Professionals